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Nature-based physical activity as an early intervention for teenagers



HEALTH &
WELLBEING:
CHILDREN &
YOUNG PEOPLE

Key points

Nature engagement and physical activity can have a positive influence on wellbeing and mental health

Coproducing a sea swimming programme with a qualified swimming instructor and mental health practitioners makes this a healthcare intervention rather than a leisure activity

This pilot study lends weight to research, which suggest that physical activity can target mental health conditions such as anxiety and depression

Participants reported decreased anxiety and increased energy, confidence and motivation

Further research specific to sea swimming is needed as this is a relatively unexplored therapeutic medium

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Abstract Research suggests that nature-based activities such as sea swimming can have a positive effect on mental health. In this small pilot study, four young people and their parents attended six group sessions for sea swimming instruction and psychoeducation. Emotional wellbeing was assessed using the World Health Organization Well-Being Index (WHO-5), and all participants reported improved emotional wellbeing. Qualitative feedback suggested that the programme improved confidence, and social and mental health outcomes for participants. This example of innovative practice suggests that nursing in an outdoor setting can be a safe, effective and enjoyable way to target early symptoms of low mood and anxiety in teenagers.

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The South Eastern Health and Social Care Trust's (SEHSCT) Population Health Strategy (2021-2024) outlines a commitment to creating conditions that enable and support individuals to lead healthy lives, both physically and mentally (SEHSCT, 2021). The trust's approach to population health focuses on working in collaboration with individuals, communities and partner organisations to address the key factors that affect health inequalities and wellbeing, with one of the three main priority areas being "working in partnership to provide early help to improve people's wellbeing" (SEHSCT, 2021).

SET Outdoors is one of the 'early help' actions identified in this strategy. The aim of SET Outdoors is to support SEHSCT children's services to improve the health, wellbeing and quality of life of vulnerable young people via engagement in purposeful, outdoor, nature-based and/or animal-facilitated therapeutic activities and therapy.

Idea for the initiative

The Down GP Federation multidisciplinary team, based in County Down, Northern Ireland, aims to provide patients with therapeutic tools and support that will enable them to improve and maintain good mental health and wellbeing. Senior mental health practitioners from the team identified a need among their practice population to engage adolescents who were presenting with low-level anxiety and mood-related difficulties following Covid-19 lockdown restrictions and the resulting isolation from their peers. There was a desire to engage young people in a fun, meaningful and social way to address these difficulties while adhering to Covid-19 guidance and minimising the risk of transmission of the virus. It was decided that these needs could be addressed via collaboration with SET Outdoors on a sea swimming programme, as such outdoor physical activity can have significant benefits.

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Mitchell (2013) studied physical activity in natural environments and concluded that it was associated with a reduction in the risk of poor mental health to a greater extent than physical activity in other environments. Bélanger et al (2019) reported that spending time outdoors promotes positive mental health among young people through increases in physical activity, and that this benefit would most likely be greater when an interaction with nature was included in the experience.

Research has suggested that visiting a 'blue space' – such as a river, lake or the coast – for recreation at least once a week can improve mental health (Garrett et al, 2019). Denton and Aranda (2020) interviewed regular sea swimmers; their findings support the concept that sea swimming may contribute to healthy physical and emotional wellbeing.

Some professionals and researchers, including van Tulcken et al (2018), have claimed that swimming outdoors can be used as a treatment approach for conditions such as anxiety and depression.

Method

After a process of meeting with various swim instructors, FLOW Swimming was identified as a partner organisation for the project. Task and finish meetings were conducted via an online platform and at the selected beach to together plan the vital elements of the project: research and justification, inclusion and exclusion criteria, risk assessment, session plans, outcome measurement, equipment and budget. Following this a programme overview document was produced.

The aim of the project was to improve the emotional wellbeing of the participants, as measured both by the World Health Organization Well-Being Index (WHO-5) and qualitative feedback. The five-item WHO-5 is among the most widely used questionnaires assessing subjective psychological wellbeing. It consists of five simple and non-invasive questions, tapping into the subjective wellbeing of the respondents. The scale has adequate validity both as a screening tool for depression and as an outcome measure in clinical trials, and has been applied across a wide range of study fields (Topp et al, 2015). Programme objectives identified to help achieve the aim of improving emotional wellbeing are detailed in Box 1.

Four young people were recruited to attend the six two-hour sessions with a parent. Some parents elected to join in the swimming activity, while others prepared

Box 1. Programme objectives

- Objective 1: To allow young people to access therapy, which is enriched by being experienced in nature
- Objective 2: To allow young people the opportunity to engage with other adolescents who experience similar mental health symptoms, thus providing opportunities to develop social skills, confidence and peer relationships in a safe, therapeutic environment
- Objective 3: To promote parent-child interactions, engagement, coregulation and relationships via participation in a fun, social leisure activity
- Objective 4: To offer parents a chance to interact with other parents of children who are struggling with their mental health and emotional wellbeing
- Objective 5: To promote healthy attitudes to safety, self-care and relationships via psychoeducation* (Take 5 approach) and therapeutic conversations

*Psychoeducation is when the health professional informs the individual about their symptoms, provides motivation for change and offers management strategies and treatment options; it is an important aspect of the treatment process (Ekhtari et al, 2017)

the fire pit on the beach. Each session incorporated a welcome with a recap of the previous session (where relevant), a safety briefing (including weather conditions and tide, and safe methods of entering and exiting the water), breathing techniques and swimming instruction, a campfire and hot chocolate, as well as therapeutic conversations regarding the Take 5 Steps to Wellbeing approach.

Take 5 Steps to Wellbeing is a set of evidence-based public health messages aimed at improving the wellbeing of the population (Belfast Strategic Partnership, 2018). The approach contributes to improving wellbeing both physically and emotionally, so that people feel good and function well. It is based on the Five Ways to Wellbeing developed by the New Economics Foundation in response to research undertaken as part of the Foresight Mental Capital and Wellbeing Project (2008).

The mental health practitioners wove the Take 5 approach into each session with the young people. Examples of how this was achieved in practice are outlined in Table 1.



Results

The WHO-5 questionnaire was completed by the young people before session 1 and after session 6. Each participant reported an improvement in their emotional wellbeing following the group programme; results are displayed in Table 2.

When scoring the WHO-5, the total raw score (maximum 25) is multiplied by 4 to calculate a percentage. 100% on the WHO-5

indicates optimal emotional wellbeing, while 0% indicates the complete absence of wellbeing (Child Outcomes Research Consortium, 2022). Participant emotional wellbeing as measured by the WHO-5 improved by 8% for one young person and 20% for another. On average, participants reported a 15% improvement in emotional wellbeing following the sea swimming programme.

In addition to the WHO-5 results, young people and their parents provided qualitative feedback. The activities were described by participants as being "great fun", with confidence and a sense of achievement being a common theme reported by participants.

"Swimming in the sea really lifted my mood. I really enjoyed the waves and have learnt new skills to keep me safe in the water. I would recommend it to my friends." (Young person)

One parent and her daughter reported that they now engage in sea swimming on a weekly basis. Parents reported that attending the group improved their relationship with their child; 100% reported that they (and their child) would attend future programmes.

"It was a great programme. It helped to distract the children from their worries and anxieties, and showed them that they could push their boundaries. It built resilience and let them try something new." (Parent)

"He only went into the water for a few minutes on the first day and on the last day he stayed in the water for the full time. He was made to believe in himself." (Parent)

Two parents who attended the group discussed the benefits to their own mental health, which included anxiety reduction and the social opportunities afforded by

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Table 1. How Take 5 Steps to Wellbeing was used

Step	How the step featured in the session
Connect	<ul style="list-style-type: none"> Young people were connected to a peer group They experienced the activity with their parent They were provided with the opportunity to connect with the mental health practitioners and swimming instructor They were provided with the opportunity to connect with nature and the coastal environment
Keep learning	<ul style="list-style-type: none"> Young people were advancing skills specific to sea swimming including self-rescue They were introduced to aquatic activities with ball skills as an introduction to water polo They were educated regarding nervous system responses, including the fight/flight/fawn/freeze response
Be active	<ul style="list-style-type: none"> Young people walked from the car to the beach location (5-10 minute walk) and back to the car They engaged in the physical activity of sea swimming They engaged in introductory rescue skills and water polo ball skills
Take notice	<ul style="list-style-type: none"> Young people were encouraged to take notice of their own body signals and emotional regulation (eg cold, hungry, tired, thirsty, sad, happy, proud) They were encouraged to take notice of how their nervous system responded to cold water immersion (fight/flight), to manage their bodily responses and to notice how their responses changed with repeated exposure to the situation (ie cold water) and led to stress reduction They were encouraged to take notice of the coastal environment (eg how strong was the water current? What sea birds could be spotted?) They were encouraged to take notice of their peers during the activity (eg are others becoming too cold/tired/ready to leave the water?)
Give	<ul style="list-style-type: none"> Young people were encouraged to think about how they could give back to the group and their local community, for example, by taking litter home from the beach or telling a friend about sea swimming

spending time with other parents:

"I can totally identify with the health benefits of open water swimming. After each of the sessions I felt a great sense of achievement, motivated and totally energised. I believe it has opened my eyes to a new form of exercise. I would definitely recommend this as a means of promoting mental health for any age group." (Mother)

Discussion and limitations

This trial of a coproduced therapeutic intervention suggests that there are many reasons for health professionals working with young people experiencing early-onset mood difficulties to consider nature-based physical activity as a treatment medium. Nurses working across the Down GP Federation have used other mediums successfully in collaboration with SET Outdoors, for example, animal-facilitated intervention and horticulture, with a wealth of positive feedback from young

people and their parents. Participants of this sea swimming programme reported improvements in wellbeing, which were both reflected in WHO-5 scores and feedback comments, suggesting that the programme was an appropriate treatment method within the context of early intervention and disease prevention.

We acknowledge that there may be barriers to setting up these kinds of group interventions, including geographical location, sourcing an appropriately qualified swim instructor, and lack of resources, such as time, money and staffing.

The fact that the sea swimming programme was coproduced in Northern Ireland may make it difficult to generalise the treatment across other parts of the UK and Ireland. Northern Ireland's healthcare system differs to that of the rest of the UK; health and social care, for example, are not separate services and funding is a devolved issue. In Ireland, the healthcare system is different from the UK's NHS in that not all citizens qualify for free public healthcare.

It was challenging to recruit young people to this activity, in part perhaps because the young people had been in lockdown for months before the intervention, because of their mood-related symptoms and because transport could not be provided to and from the sessions (Covid-19 risk assessment did not allow patients from different households to travel in a vehicle together). It is hoped that, as news spreads throughout the GP practices in the Down Federation of the success of this intervention, it will become easier to recruit future participants.

When it was apparent that the target number of eight young people could not be achieved, the scope of the activity was widened to incorporate parents. In hindsight, this added unexpected depth to the group, with parents forming social connections and reporting that completing the weekly activity with their child improved relationships. Research has consistently demonstrated the association between poor parental mental health and negative outcomes for children (Wolicki et al, 2021).

Future programmes should consider the benefits of including parents in group interventions for teenagers. Possible benefits include improved parent-child attachment and attachment, improved parental – as well as adolescent – emotional wellbeing, fewer difficulties associated with recruiting socially anxious or avoidant teenagers, and long-term systemic changes, such as families choosing to exercise together on a regular basis. Parent improvements in emotional wellbeing after the sea swimming sessions could easily have been captured using WHO-5, which would have led to a deeper

Table 2. WHO-5 results

	Before the first session	After the last session
Young person 1	● 48%	● 64%
Young person 2	● 52%	● 72%
Young person 3	● 60%	● 76%
Young person 4	● 56%	● 64%

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understanding of how the programme helped the whole range of participants. Ingoldsby (2010) investigated randomised control trials, which examined different methods of improving family engagement in child mental health interventions, with the goal of identifying supporting evidence for frequently used interventions due to their assertion that “engaging and retaining families in mental health prevention and intervention programs is critically important to [ensure] maximum public health impact”.

Mental health practitioners working across primary care in Northern Ireland were commissioned by various GP Federations to offer early, preventative and brief interventions targeting mild to moderate mental health problems. The nurses working in the Down GP Federation are ideally situated in the community, with a remit for patients from cradle to grave, to offer this type of family-centred, motivating and preventative treatment. Within the SEHSCT, this programme has been adapted in collaboration with other services/nursing professionals, such as child and adolescent mental health services. In this case, the goal was not to prevent mental ill health but to target specific mood-related symptoms, and, once again, 100% of young people reported improvement post-programme (a reduction in anxiety symptoms as measured by the Beck Anxiety Inventory).

The concept of taking therapy outside of the clinical setting and of incorporating physical activity into mental health interventions is not unique to nursing. Indeed, this approach (using outdoor physical activity to promote health and wellbeing) has been used across the SEHSCT by occupational therapists, social workers, physiotherapists and psychologists. Nurses are critical to the delivery of health and social care; making up a quarter of the NHS workforce (National Audit Office, 2020). This means that nurses can play an



Left to right: two group attendees pictured with Davy, Melissa and Maureen

“Swimming in the sea really lifted my mood. I really enjoyed the waves and have learnt new skills to keep me safe in the water. I would recommend it to my friends”

important role in driving innovation across healthcare settings.

Thompson (2019) argues that the current emphasis on mental wellbeing plays an important role in widening the focus of nurses and health professionals beyond the narrowness of the medical model. He states that mental health can be better understood in holistic terms; as quality of life, which is made up of psychological, social and spiritual factors and their various interactions. Nursing this group of young people in an outdoor setting allowed for an inclusive, motivating programme, which introduced social exercise as a stress-management strategy. Young people did not simply talk about their problems on a one-to-one basis with a nurse, be informed about treatment approaches or take medication. They had a ‘lived experience’; they were taught new skills experientially, challenged themselves in real-life situations, formed peer relationships and gained confidence via trial and error in a safe and supported environment.

Conclusion

Research has highlighted the significant health benefits of engaging with outdoor blue spaces, but the authors are unaware of any clinical research that uses sea swimming in this manner with adolescents. Further research into this potentially transformative treatment medium for this

patient group is needed to add weight to the feasibility of incorporating sea swimming into early intervention and prevention treatment programmes. **NT**

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The group playing water volleyball